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SOIL SURVEYS

Easting: 503363 Northing: 6960753

RL: -11.37 m Operator: SO Machine: Scout 2

BOREHOLE RECORD SHEET

Location Number: BH 301

Project Number: 110-12936 Project Name: Cross River Rail

Location: Brisbane Client: AECOM

Description Description Description Sity CLAY (CH) Very acfit, high plasticity, dark Sity CLAY (CH) Very acfit, high plasticity, dark grey, with organics and wood please. Sity CLAY (CH) Wery acfit, high plasticity, dark grey, with organics and wood please. 2.0 2.76 3.0 Sandy CRAVEL (CP) Medium dense, fine to medium size, grey and brown, fine to coarse grained sand. Sandy CLAY (CH) Hard, high plasticity, orange brown and light grey, fine to coarse grained sand. 5.0 Sandy CLAY (CH) Hard, high plasticity, orange brown and light grey, fine to coarse grained sand. 5.0 Sandy CLAY (CH) Werk in the coarse grained sand. 5.0 Sandy CLAY (CH) Werk in the coarse grained sand. 5.0 Sandy CLAY (CH) Hard, high plasticity, orange brown and light grey, fine to coarse grained sand. 5.0 Sandy CLAY (CH) Hard, high plasticity, orange brown and light grey motified orange 5.0 Sandy CLAY (CH) Hard, high plasticity, orange brown and light grey motified orange 5.0 Sandy CLAY (CH) Hard, high plasticity, orange brown and light grey motified orange 5.0 Sandy CLAY (CH) Hard, high plasticity, orange brown and light grey motified orange 5.0 Sandy CLAY (CH) Hard, high plasticity, orange brown and light grey motified orange 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.	Logger: DA/DT Operator: S		1/2011	Page: 1 OF 4
Silty CLAY (CH) Very soft, high plasticity, dark grey, with organics and wood pieces. 2.75 3.0 3.80	Drilling Method Comparison of the comparison	- Description	Weathering Strength Estimated Spacing Strength Spacing Strength Spacing Strength Spacing Strength Spacing Strength Strength Strength Spacing Strength Streng	Samples and Remarks
Sandy CRAVEL (GP) Medium dense, fine to medium size, grey and brown, fine to coarse grained sand. 3.60 Sandy CLAY (CH) Hard, high plasticity, orange brown and light grey, fine to coarse grained sand. TUFF (XW) Very weak, light grey mottled orange brown. 7.0 X X X X X X X X X X X X X X X X X X X		Silty CLAY (CH) Very soft, high plasticity, dark		
Sandy CLAY (CH) Hard, high plasticity, orange brown and light grey, fine to coarse grained sand. 5.0 6.0 6.0 1.5.24.30135mm NrR 1.5.24.30135m	3.0	medium size, grey and brown, fine to coarse		
TUFF (XW) Very weak, light grey mottled orange brown. 18, 24, 30/120mm Net 16, 24, 30/	<u>-4.</u> 0	brown and light grey, fine to coarse grained sand.		SPT
Section Sec	7.0 × 5 × 5 × 5 × 5 × 5 × 5 × 5 × 5 × 5 ×	brown.		18, 24, 30/120mm Ñ=R
Ueffects -1.54m: F, 60". F, K, U, C I Drilled from floating barge - all depths measured from river bed level 2) Note: the coring method used was NQ3 not NMLC. 3) Borehole grouted on completion. Defen (m) Type (Dig (Right) Flamenty) Roughress Apendate Intill Recognition of County Roughress Appendate Intill Recognition of County Roughress Roughre	9.0 × 3 × 3 × 3 × 3 × 3 × 3 × 3 × 3 × 3 ×	brown.	Weathering Grades Saw	
S. Shear zone 1. Second Street 2. Shear zone 3. Shear zone 3. Shear zone 4. Shear zone 3. Shear zone 3. Shear zone 3. Shear zone 3. Shoring 9.		ths measured from thou used was NQ3 of the complete of the com	RS - Residual Soil XV - Extremely weathered DW - Distinctly weathered DW - Sistinctly weathered FR - Fresh Rock Strength VV - Very weath W - Weak MS - Medium strong Distu	U50 SPT Approved:

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SOIL SURVEYS

Easting: 503363

Northing: 6960753 RL: -11.37 m

BOREHOLE RECORD SHEET

Location Number: BH 301

Project Number: 110-12936 Project Name: Cross River Rail

Location: Brisbane Client: AECOM

Logger: DA/DT Operato	•	Scout 2 Date: 21/					Page: 2 OF 4
Drilling Method Depth Depth	Graphic	Description	Weathering	Estimated S	Defect Spacing S	RQD	Samples and Remarks
10.25	×××						_
<u>-</u> - - - 11.0	× × × brown, granula × × × fractures. × × × × × × × × × × × × × × × × × ×	ained, pale grey stained orange ar, thickly bedded, closely spaced	DW			3 40	10.37 m; J, 60° , P, R, O, L 10.55 m; J, 45° , P, R, O, L 10.90 m; J, 70° , C, R, O, L 11.00 m; J, 70° , P, R, O, L 11.10 m; J, 10° , P, R, O, L 11.43 m; J, 65° , P, R, O, L 11.51 m; J, 20° , P, S, O, L 11.55 m; J, 30° , P, R, O, L
11.85 - 12.0	· · · · · · · · · · · · · · · · · · ·	0.40m (11.85-12.25)			 		11.65 m; J, 10° , P, R, O, L 11.68 m; J, 70° , S, R, O, L 11.75 m; J, 20° , P, R, O, L
12.25 - - - - - 12.70	× × × TUFF, fine gra × × × brown, granula × × × spaced fractur	nined, dark grey stained orange ar, thickly bedded, very closely res. 0.30m (12.70-13.00)	DW - SW				12.40 m; J, 30 °, P, R, O, Z
<u>- 13.0</u> 13.00	× × > TUFF, fine gra × × > fragmented to × × > limonite in frac	nined, dark grey, thickly bedded, extremely close fractures, some ctures.	SW				13.15 m; J, 85° , U, R, O, L — 13.45 m; J, 75° , P, R, O, Z
- - - - - - - - - - - - - - - - - - -	laminated with	fine grained, dark grey, thinly closely spaced fractures. SILTSTONE and SANDSTONE, alternating pale grey and dark grey,	FR		8	9 32	13.67 m; J, 85° , P, R, O, W 13.74 m; J, 5° , P, R, O, W
loped by Datge	granular, thinly	y laminated, very closely to dely spaced fractures.					14.12 m; Dl, 10° , P, R, O, Z
- 15.00	CONGLOMER	RATE, coarse grained, pale grey					14.82 m; Dl, 27° , P, R, O, Z 14.83 m; Dl, 20° , P, R, O, Z 14.95 m; Dl, 10° , P, R, O, Z
5 14:30	bedded, close oooo spaced fractur oooo sub-rounded s	d dark grey, granular, massively ly spaced to moderately widely es. Clasts are coarse gravel sized Siltstone, Sandstone and Quartz. tone lense from 15.95m to 16.09m					15.36 m; J, 10° , P, V, O, Coal
<-C)rawingFile>>	0000 Clast supporte 0000 0000 0000 0000 0000					0 90	16.10 m; DI, 10° , U, V, O, Z 16.25 m; DI, 5° , S, V, O, Z 16.35 m; DI, 5° , U, V, O, Z 16.44 m; DI, 5° , S, V, O, Z
							16.77 m; Dl, 10° , S, V, O, Z
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						17.37 m; DI, 10° , U, V, O, Z
SURVEY BOREF							18.65 m; DI, 15° , C, V, O, Z
2012-08-01 19.00						0 80	19.6m, Is50 = 1.26 MPa 19.51 m; DI, 15°, S, V, O, Z 19.68 m; DI, 5°, S, V, O, Z
£ 20.0 − 20.0	0 0 0 0 0 0 0 0		<u> </u>				20m, Is50 = 1.13 MPa
Comments: 1) Drilled from floating barge - a river bed level. 2) Note: the cori not NMLC. 3) Borehole grouted	ll depths measured from ng method used was NQ3 on completion.	H - Schistosity S - Subplanar R - Rought N - Cleant N - L-Li J - Joint T - Stepped V - Very rough S - Stain Q - Q L - Cleavage U - Undufating S - St	iay [in Oxide alcite nonite	Veathering Grade Rs - Residual Soil W - Extremely weathere DW - Distinctly weathere SW - Slightly weathered FR - Fresh Rock Strength VW - Very weak W - Weak	ed ed i	J50 SPT	Approved:
oo _ V Water First Noted _ V Water S	steady Level	N - Platuter U - U S - Shear zone		MS - Medium strong S - Strong VS - Very strong ES - Extremely strong	Distur San		Approved: Date:

RL: -11.37 m

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SOIL SURVEYS

Easting: 503363

Northing: 6960753

BOREHOLE RECORD SHEET

Location Number: BH 301

Project Number: 110-12936 Project Name: Cross River Rail

Location: Brisbane Client: AECOM

Logger: DA				21/11/2011					Page: 3 OF 4
Drilling Method Casing Casing	Depth G	-	Description	Weatherin	Strength Estimated RS W W MS S VS ES	Defect Spacing	Rec (%)	RQD	Samples and Remarks
	_ _ _ _	0 0		FR					19.90 m; J, 18° , P, R, O, Z 20.20 m; J, 30° , S, V, O, Z
		0 0					100	80	20.61 m; J, 35°, U, V, O, Z
		conditions of the conditions o	RATE, coarse grained, pale gred dark grey, granular, massively nented to closely spaced fracturerse gravel sized, sub-rounded dstone and Quartz. Clast, fine grained, pale grey with so	res. of					21.30 m; Dl, 10°, P, S, O, Z 21.40 m; J, 10°, P, S, O, Coal 21.57m, ls50 = 2.73 MPa
		spaced fractur 21.9m and 22.	granular, thinly bedded, closely es. Siltstone bands from 21.8n .28m to 22.3m. Trace of siltston RATE, coarse grained, pale gre	n to ne			100	90	22.27 m; Dl, 80°, P, R, O, Z 22.33 m; Dl, 10°, U, V, O, Z
	22.83 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	white speckled bedded, close spaced fractur sub-rounded c	d dark grey, granular, massively ly spaced to moderately widely es. Clasts are coarse gravel si of Siltstone, Sandstone and Qu	zed, artz.					22.60 m; J, 60° , P, R, O, Z 22.82m, ls50 = 2.45 MPa 22.81 m; J, 20° , P, R, O, Z 23.00 m; J, 10° , P, S, O, Coal
		from 22.60m to CONGLOMER grey, granular,	ed. With a fine Sandstone band o 22.83m. RATE, coarse grained, pale whi , medium bedding, moderately fractures. Clasts are coarse gi	te			100	100	23.60 m; J, 10° , P, S, O, Coal
eloped by Datgel		sized, sub-rou Quartz. Clast s sequence. 3m	nded of Siltstone, Sandstone a supported. Coarsening upward m of coal at 28.0m. SILTSTONE and SANDSTON	nd					
30 8.30.002 Dev		fine grained, a	Ilternating pale grey and dark g y laminated, moderately widely res. Coal laminae from 23.0m t	rey,					25.1m, ls50 = 0.84 MPa 25.20 m; Dl, 20° , U, V, O, Z
GPJ < <drawingfile>> 21/05/2012 14:30 8.30.002 Developed by Datgel</drawingfile>		white speckled bedded, widel gravel sized, s and Quartz. C	RATE, coarse grained, pale gred dark grey, granular, massively y spaced fractures. Clasts are sub-rounded of Siltstone, Sandalast supported.	/ fine					
/.GPJ < <drawingf< td=""><td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>CONGLOMER white speckled bedded, close medium grave</td><td>RATE, coarse grained, pale gred dark grey, granular, massively spaced fractures. Clasts are all sized, sub-rounded of Siltstord</td><td><i>,</i></td><td></td><td></td><td>100</td><td>100</td><td>26.29 m; Dl, 15°, U, V, O, Z</td></drawingf<>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	CONGLOMER white speckled bedded, close medium grave	RATE, coarse grained, pale gred dark grey, granular, massively spaced fractures. Clasts are all sized, sub-rounded of Siltstord	<i>,</i>			100	100	26.29 m; Dl, 15° , U, V, O, Z
3 111-12936 NEW	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		d Quartz. Clast supported.						27.13 m; Dl, 5°, U, V, O, Z 27.25m, ls50 = 1.75 MPa 27.25 m; Dl, 5°, C, V, O, Z
SURVEY BOREHOLE LOG 111-12936 NEW	- 28.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	CONGLOMEF granular, mass spaced fracture sub-rounded S	RATE, coarse grained, pale gre sive bedding, moderately widel res. Clasts are medium sized Siltstone, Sandstone and Quart dd. Coarse sand lenses from 2	y z.					28.12m, ls50 = 0.49 MPa 28.21m, ls50 = 1.75 MPa 28.30 m; J, 89° , S, V, O, Z
SOIL	_ 00	to 27.88m, 28. 28.48m. CONGLOMEF grey, granular	05m to 28.1m and 28.44m to RATE, coarse grained, pale whi, massively bedded, moderatel fracturing. Clasts are coarse of	te y			100	85	29.08 m; Dl, 10° , P, V, O, Z
Comments 1) Drilled from		sized, sub-rou Quartz. Clast s gravel from 30 30.95m.	nded of Siltstone, Sandstone a supported. Some lenses of fine 0.40m to 30.55m and 30.80m to	nd					
	: n floating barge - all de el. 2) Note: the coring m) Borehole grouted on c	oths measured from ethod used was NQ3 ompletion.	H - Schistosity C Cubeloner C Cenerth O Co.	ire Infili	Neathering Gr. RS - Residual Sc XW - Extremely weat DW - Distinctly weath SW - Slightly weath FR - Fresh Rock Streng	oil thered hered iered	ample U5	_	
SURV	NotedWater Stead		J - Joint S - Supparar S - Smoom O - Up L - Cleavage U - Undudsting S - Shear zone T - Contact V - Ven Z - Decomposed Zone D - Dilling Induced break	n Q - Quartz S- Secondary mineral U - Unidentified mineral W - Weathered rock X - Carbonaceous Z - Clean	W - Very weak W - Weak MS - Medium stro S - Strong VS - Very strong	ong Dis	SP sturbe Sampl	d F	Approved: Date:

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SOIL SURVEYS

Easting: 503363

Northing: 6960753 RL: -11.37 m

Location Number: BH 301

Project Number: 110-12936 Project Name: Cross River Rail

Location: Brisbane Client: AECOM

BOREHOLE RECORD SHEET

Logger: DA		-	Machine: Scout 2 Date: 21	/11/20	11				Page: 4 OF 4
Drilling Method RR RR Casing	Depth	Graphic	Description	Weath	ering Estimated Sp	Defect pacing	Rec (%)	RQD	Samples and Remarks
		00000000000000000000000000000000000000	CONGLOMERATE, coarse grained, pale white grey, granular, massively bedded, moderately widely spaced fracturing. Clasts are coarse gravsized, sub-rounded of Siltstone, Sandstone and Quartz. Clast supported. Some lenses of fine gravel from 30.40m to 30.55m and 30.80m to 30.95m. (continued)	rel	TOTAL CONTROL OF THE PARTY OF T		100	85	30.27 m; Dl, 21° , U, V, O, Z
	E								31.29m, ls50 = 0.31 MPa
		0000	SILTSTONE, fine grained, dark grey with some pale grey layers, laminated, extremely closely spaced fractures. Some rounded coarse gravel clasts at 31.77m.				100	89	31.48-31.85 m; B, 5° , P, S, O, Z
	<u></u>	000000	CONGLOMERATE, coarse grained, pale white grey with some darker grey clasts, gravel clasts are medium sized, sub-rounded, with trace fine						32.20 m; DI, 20° , P, R, O, Z
	33.0) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	cobbles, clast supported, massively bedded, moderately widely spaced fractures. With a thin band of diagenetic quartz at 33.0m and a band fine grained foliated Phyllite from 35.46m to 35.62m.	of					33.23m, ls50 = 2.22 mra 33.23m, ls50 = 0.37 MPa 33.32 m; J, 30° , P, R, O, Z 33.47 m; J, 40° , C, R, O, Z
zz Developed by Datger	<u>34</u> .0 _ _ _ _ _ _ _ _ _ <u>35</u> .0	000000000000000000000000000000000000000					100	84	34m, ls50 = 1.98 MPa 34.37 m; Dl, 20° , U, S, O, Z
Ord * Namigniez z 100.001 14.30 0.00.002 Developed by Dagge	35.62		CONGLOMERATE, pale white grey with some darker grey clasts, gravel clasts are medium siz sub-rounded, with trace fine cobbles, clast	ed					35.30 m; J, 35° , P, S, O, Z 35.57m, Is50 = 2.73 MPa
			sub-rounded, with trace line cobbles, clast supported, massively bedded, closely spaced fractures, quartzite bands from 35.73m to 35.78 and 35.85m to 35.88m. BOREHOLE BH 301 TERMINATED AT 35.88 in the support of the	╝					
	<u>- 3</u> 7.0 - - - - - -								
Comments 1) Drilled from river bed levinot NMLC. 3	<u>- 3</u> 8.0 								
Comments 1) Drilled from the control of the contro		l depths ng meth on com		II Clay Iron Oxide Calcite Limonite - Quartz Secondary mineral - Weathered rock	Weathering Grades RS - Residual Soll XW - Extremely weathered DV - Distinctly weathered SW - Slightly weathered SW - Slightly weathered FR - Fresh Rock Strength VW - Very weak W - Weak	,	mple U5 SP	0	Approved
	t Noted _ Water S	teady Le		- Unidentified mineral - Weathered rock - Carbonaceous - Clean	MS - Medium strong S - Strong VS - Very strong ES - Extremely strong		turbe ampl		Approved: Date:





SOIL SURVEYS

TITLE

SURVEYS_00 LIBRARY.GLB GrfcTbi DG PHOTO CORE PHOTO 4 PER PAGE 111-12936 NEW.GPJ <<DrawingFile>>

AECOM Brisbane Cross River Rail Core Photo - BH 301

DT	26/04/2012
CB	26/04/2012
Not To S	cale A4
PROJECT No 110-12936	FIGURE No 2/2

IN-SITU PACKER PERMEABILITY TEST RESULT

PROJECT:CRRBH No.:301Packer type:SinglePROJECT No.:110-12936Test No.:1Packer pressure:2000kPa

Date:24/11/2011Gauge pressures measured in:kPaTested by:CS

Vertical depth to: Top of (below river bed)

Top of test section (m):	19.00
Base of test section (m):	21.00
Centre of test section(m):	20.00
Base of casing (m):	18.00
Ground water (m)	TIDAL

Depth of centre of test section (m):	20.00
Length of test section (m):	2.00

Gauge Height above ground level (m):		
Hole Diameter in test section (mm)	75	

1st period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	30.0	30.0	30.2	30.5	Flow (I/min)
75	Water Take	0.00	0.00	0.20	0.30	0.033
2nd period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	32.5	32.6	33.0	33.5	Flow (I/min)
150	Water Take	0.00	0.10	0.40	0.50	0.067
3rd period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	35.5	35.9	36.9	37.5	Flow (I/min)
300	Water Take	0.00	0.00	1.00	0.60	0.107
4th period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	37.5	37.4	37.5	37.8	Flow (I/min)
150	Water Take	0.00	-0.10	0.10	0.30	0.020
5th period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	37.6	37.6	37.6	37.6	Flow (I/min)
75	Water Take	0.00	0.00	0.00	0.00	0.000

Period	Flow (q)	Gauge Press	Gauge Press	Friction Loss	s (m)*	Total Head	Lugeon	Perm.
	(l/min)	(kPa)	(m of water)	Basic	In extra rods	(m)	Value	(m/s)
1st	0.033	75.00	7.665	0.000	0.000	27.665	0.062	6.35E-09
2nd	0.067	150.00	15.330	0.000	0.000	35.330	0.096	9.94E-09
3rd	0.107	300.00	30.660	0.000	0.000	50.660	0.108	1.11E-08
4th	0.020	150.00	15.330	0.000	0.000	35.330	0.029	2.98E-09
5th	0.000	75.00	7.665	0.000	0.000	27.665	0.000	0.00E+00

^{*}Where friction loss is assumed to be negligible.

N.B. Pressure Conversion: 1 bar = 100 kPa = 14.503 psi

IN-SITU PACKER PERMEABILITY TEST RESULT

PROJECT:CRRBH No.:301Packer type:SinglePROJECT No.:110-12936Test No.:2Packer pressure:2000kPa

Date: 24/11/2011 Gauge pressures measured in: kPa
Tested by: CS

Vertical depth to: Top of test section (m): 24.00

(Below River bed) Base of test section (m): 28.00

Centre of test section(m): 26.00

 Centre of test section(m):
 26.00

 Base of casing (m):
 23.00

 Ground water (m)
 TIDAL

Depth of centre of test section (m): 26.00
Length of test section (m): 4.00

Gauge Height above ground level (m):
Hole Diameter in test section (mm) 75

1st period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	41.8	44.0	44.8	45.4	Flow (I/min)
100	Water Take	0.00	2.20	0.80	0.60	0.240
2nd period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	51.8	55.0	56.2	58.5	Flow (I/min)
200	Water Take	0.00	3.20	1.20	2.30	0.447
3rd period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	60.0	65.0	68.0	71.0	Flow (I/min)
300	Water Take	0.00	0.00	3.00	3.00	0.400
4th period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	87.0	89.0	91.0	93.0	Flow (I/min)
200	Water Take	0.00	2.00	2.00	2.00	0.400
5th period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	93.0	93.0	93.0	93.0	Flow (I/min)
100	Water Take	0.00	0.00	0.00	0.00	0.000

Period	Flow (q)	Gauge Press	Gauge Press	Friction Loss	s (m)*	Total Head	Lugeon	Perm.
	(l/min)	(kPa)	(m of water)	Basic	In extra rods	(m)	Value	(m/s)
1st	0.240	100.00	10.220	0.000	0.000	36.220	0.169	2.05E-08
2nd	0.447	200.00	20.440	0.000	0.000	46.440	0.246	2.97E-08
3rd	0.400	300.00	30.660	0.000	0.000	56.660	0.180	2.18E-08
4th	0.400	200.00	20.440	0.000	0.000	46.440	0.220	2.66E-08
5th	0.000	100.00	10.220	0.000	0.000	36.220	0.000	0.00E+00

^{*}Where friction loss is assumed to be negligible.

Note - flows during 3rd period adjusted for loss through pressure head

N.B. Pressure Conversion: 1 bar = 100 kPa = 14.503 psi

IN-SITU PACKER PERMEABILITY TEST RESULT

PROJECT:CRRBH No.:301Packer type:SinglePROJECT No.:110-12936Test No.:3Packer pressure:2000kPa

Date: 24/11/2011 Gauge pressures measured in: kPa
Tested by: CS

Vertical depth to: (below river bed)

Top of test section (m):	29.00
Base of test section (m):	33.00
Centre of test section(m):	31.00
Base of casing (m):	28.00
Ground water (m)	TIDAL

Depth of centre of test section (m):	31.00
Length of test section (m):	4.00

Gauge Height above ground level (m):		
Hole Diameter in test section (mm)	75	

1st period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	100.0	100.5	101.0	101.6	Flow (I/min)
75	Water Take	0.00	0.50	0.50	0.60	0.107
2nd period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	103.0	104.5	106.8	108.0	Flow (I/min)
150	Water Take	0.00	1.50	2.30	1.20	0.333
3rd period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	109.6	124.0	124.0	124.0	Flow (I/min)
225	Water Take	0.00	14.40	0.00	0.00	0.960
4th period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	87.0	89.0	91.0	93.0	Flow (I/min)
	Water Take	0.00	2.00	2.00	2.00	0.400
5th period	Time (mins)	0	5	10	15	Average
Gauge Pressure	Flow reading	93.0	93.0	93.0	93.0	Flow (I/min)
	Water Take	0.00	0.00	0.00	0.00	0.000

Period	Flow (q)	Gauge Press	Gauge Press	Friction Loss (m)*		Total Head	Lugeon	Perm.
	(l/min)	(kPa)	(m of water)	Basic	In extra rods	(m)	Value	(m/s)
1st	0.107	75.00	7.665	0.000	0.000	38.665	0.070	8.53E-09
2nd	0.333	150.00	15.330	0.000	0.000	46.330	0.184	2.23E-08
3rd	0.960	225.00	22.995	0.000	0.000	53.995	0.454	5.50E-08
4th	0.400	0.00	0.000	0.000	0.000	31.000	0.330	3.99E-08
5th	0.000	0.00	0.000	0.000	0.000	31.000	0.000	0.00E+00

^{*}Where friction loss is assumed to be negligible.

N.B. Pressure Conversion: 1 bar = 100 kPa = 14.503 psi

Note - Test abandonned in 3rd period due to excessive leakage through pressure head